

§Appl. No. 10/530,023
Amdt. dated March 16, 2009
Reply to Office Action of, November 17, 2008

REMARKS

Single new apparatus claim 32 has replaced original claims 1-4 and single independent method claim 33 has replaced original method claims 16-19. Thus the remaining claims are single new apparatus claim 32 and claims 5-15 depended therefrom, and single new method claim 33 with claims 20-31 and 34 depended therefrom. New dependent claim 34 is filed to cover the subject matter of claim 31 that originally depended from method claims 16-30 and now depends from method claim 33.

Applicant expresses his sincere appreciation for the indication of allowable subject matter in claims 8-14 and 23-29, however the Applicant is of the opinion that he is entitled to the broader protection granted by the European Patent Office through the allowance of new claims 1 and 3 (see Applicant's new claims 32 and 33 corresponding to claims 1 and 13 of Exhibit A which are now allowed EPO claims, but modified slightly to correspond more closely to U.S. patent practice).

Claim Rejections Under 35 U.S.C. §112:

Claim 15 has been amended to depend from claim 8 with the term "control" being replaced by the term "regulation" so that there is now proper antecedent basis for all recitations in claim 15.

Claim 30 has been amended to depend from claim 23 to provide proper antecedent basis for all recitations in claim 30.

Claim 31 now depends only on the single apparatus claim 32 while the new claim 34, which contains the subject matter of claim 31, depends only on method claim 33.

Claim Rejections Under 35 U.S.C. §103:

Claims 1-7, 16-22 and 31 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Hu et al. '542. Applicant respectfully traverses this rejection.

Hu et al. '542 discloses a beverage preparation apparatus having a collecting device 37 with a seat suitable to receive a disposable cartridge 10 containing a soluble product. The cartridge includes an outlet opening for delivery of a beverage; however, Hu et al. '542 does not disclose a piercing element that engages the dispensing opening wherein the diameter of the piercing element "D2" is greater than the diameter "D1" of the dispensing opening with the ratio in new amended claims 32 and 33 being within the claimed range of $1 \leq R \leq 1.067$. This range limitation now appears in independent apparatus claim 32 and independent method claim 33, both claims having appeared originally and been examined in claims 4 and 19 of the Preliminary Amendment.

The rejection includes the opinion that "since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art," Applicant's limitation of the range $1 \leq R \leq 1.067$ involves only routine skill in the art. Applicant respectfully disagrees because the range results in an excellent dissolution of the product and an increase of the "cream" and other desirable characteristics of the obtained coffee. The importance that a beverage, such as coffee and cappuccino, be "creamy" in a consistent manner from cup to cup can not be underestimated. This is because the appearance of these beverages affects their salability. Being creamy means that the beverage has an appreciable amount of enduring small-bubble froth. As has been pointed out in the Background of the Invention, obtaining such consistency is complicated by the fact that the shape and dimension of the cartridge are the same for all products dispensed, yet the amount of soluble product in the cartridge varies dramatically from product to product. In the Background of the Invention, an example is given of 1.5 grams of product for espresso coffee and 15-16 grams of product for chocolate in cappuccino, which clearly demonstrates a substantial range. The variation and amount effect the capacity to soluabilize the product homogenously. Clearly this is a problem a solution to which requires more than only routine skill in the art. Applicant has solved this problem by determining that the ratio between the diameter D2 of the engagement portion of the piercing member and the diameter D1 of the outlet opening is in a specific range, i.e., the range of $1 \leq R \leq 1.067$. There is absolutely nothing obvious to one skilled in the art about the claimed ratio R.

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Note that in the examples that the ratio $R (D2/D1)$ is $15.0 \text{ nm}/14.7 \text{ nm}$ which equals 1.0204. Clearly the ratio 1.067 is greater than the ratio of 1.0204 and thus fulfills the limitation of the claims.

As pointed out in Applicant's Summary of the Invention, the reduced diameter dispensing ports that are formed between the cartridge and piercing member during the beverage dispensing phase constitute a temporary throttling, i.e., a throttling that is eliminated at each delivery when the cartridge is removed, and that is newly created at the following delivery when a new cartridge is inserted into the collecting-piercing device. This arrangement produces beverages that have homogenous and uniform solubilization of the product and results in a beverage with optimum appearance by being suitably creamy. In Hu et al. '542 there is no disclosure or suggestion to provide a capsule having an opening defined by a breaking line that is engaged by a piercing element having a diameter that is greater than the opening so no actual opening exists until pressurized water is pumped into the capsule and forms the bottom wall, so as to generate a thin circular gap around the piercing member from which the beverage is dispensed.

Applicant has found that if the diameters of the piercing member and of the opening are within the claimed ratio R , wherein R is equal or greater than 1 and equal or less than 1.067, the obtained circular gap between the diameter and the bottom of the disposable cartridge and the piercing member is clearly within the limits of the range.

There is nothing in Hu et al. '542 to suggest that the advantages obtained by Applicant were predictable. In particular, the increase in the amount of cream was clearly unexpected. Accordingly, neither apparatus claim 32 nor method claim 33 is obvious over Hu et al. '542. Dependent claims 5-15 and 17-31 and 34 include all the limitations of their respective parent claims 32 and 33, and for that reason are allowable for the same reasons as independent claims 32 and 33.

In that this is a full and complete response to the Office Action of November 17, 2008, it is respectfully requested that this application be allowed and passed to issue. If the Examiner for any reason feels that a personal conference might expedite prosecution of this application, the Examiner is respectfully requested to telephone the undersigned locally.

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The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

/John R. Moses/

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